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ABSTRACT

This document presents an outline for a 135-hour course designed to familiarize the student with aircraft wood structures and related Federal Aviation Agency requirements. Topics outlined are identification of defects on wood samples, defining terms used on wood structures, inspecting wood structure together with servicing and repair of wood structure. Fabric covering--selecting and applying fabric and plastic covering material; inspecting, testing, and repairing fabric; identifying and selecting aircraft finish materials, application and inspection of finish materials; and application plus inspection of the finish with identification of defects--is also covered. The aviation airframe maintenance technician must be able to demonstrate his ability to inspect, service, and repair aircraft wood structures; inspect and repair aircraft fabric coverings; and select and apply aircraft finishing materials. The behavioral objectives and performance standards necessary for a person to become an aviation airframe mechanic or a combined airframe and powerplant mechanic with a Federal Aviation Agency license are specified. A 12-item bibliography, a list of seven filmstrips, and a Quinmester posttest sample are included. (KP)

ED 092692

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Course Outline

AVIATION MECHANICS 2 (Air Frame)
(Aircraft Wood Structures, Covering and Finishing Methods)

Department 48 - Course 9065.01

CE 001 421

DADE COUNTY PUBLIC SCHOOLS

DIVISION OF INSTRUCTION • 1971

D A D E C O U N T Y P U B L I C S C H O O L S

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M I A M I, F L O R I D A 33132

ED 092692

Course Outline

AVIATION MECHANICS 2 (Air Frame)
(Aircraft Wood Structures, Covering and Finishing Methods)

Department 48 - Course 9065.01

the division of

VOCATIONAL, TECHNICAL AND ADULT EDUCATION

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Dade County Public Schools
Miami, Florida 33132

Published by the Dade County School Board

Course Description

9065	48	9065.01	Aircraft Wood Structures, Covering and Finishing Methods
State Category Number	County Dept. Number	County Course Number	Course Title

A study of related and manipulative aircraft wood structures with emphasis on the FAA requirements, such as identification of defects on wood samples, defining terms used on wood structures, inspecting wood structure, servicing and repair of wood structure. Includes fabric cover, selecting and applying fabric and plastic covering material, inspecting, testing and repairing fabric. Identifying and selecting aircraft finish materials, such as dope and paint, application and inspecting finish materials, such as dope and paint, application and inspecting finish and identifying defects on finished materials is also covered.

Indicators of success: Successful completion of ALL quinmesters of the Aviation Mechanics (Airframe and Powerplant General) course, Number 9073.

PREFACE

The course outline that follows has been prepared as a guide to help the trainee in the skills and knowledge necessary to become an Aviation Airframe Mechanic.

This is a course composed of knowledge and skills necessary should one decide to follow the Airframe Mechanic or combined Airframe and Powerplant Mechanic Curriculum leading to a Federal Aviation Agency License.

Trainees desiring to follow this curriculum must first successfully complete the basic Aviation Mechanic Curriculum which applies equally to both the Airframe and Powerplant License. This course is composed of three blocks of several units each requiring one quinmester or 135 hours.

Great emphasis will be placed on the use of lecture, audio-visual aids and instruction sheets of various types. A listing of the Behavioral Objectives which are to be met to earn satisfactory grades is included. Following each unit title will be found, in parentheses, several letters and numbers designating the time spent in terms of theory and shop work. EIT indicates the estimated instructional time, T indicates the time spent in theory or classroom work and L/S indicates time spent in laboratory or shop work.

The level 1 following a unit denotes that the student must have knowledge of general principles but no practical application, nor development of manipulative skills. Instruction is given by lecture, demonstration and discussion. The level 2 following a unit denotes that the student must have knowledge of general principles and limited practical application, and adequate manipulative skill to perform basic operations. Instruction is given by lecture, demonstration, discussion and a limited amount of practical application. The level 3 following a unit denotes that the student must have knowledge of general principles and performance of a high degree of practical application and manipulative skill to accomplish return-to-service operations. Instruction at this level is given by lecture, demonstration, discussion and a large amount of practical application.

This outline has been developed through the cooperative efforts of the instructional and supervisory personnel, the Quinmester Advisory Committee and the Vocational Teacher Education Service, and has been approved by the Dade County Vocational Curriculum Committee.

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with Suggested Hourly Breakdown

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GOALS

The aviation airframe maintenance technician must be able to demonstrate:

1. His ability to inspect, service and repair aircraft wood structures.

2. Inspect and repair aircraft fabric coverings.

3. Select and apply aircraft finishing materials.

Course Outline

AVIATION MECHANICS 2 (Air Frame)
(Aircraft Wood Structures, Covering and Finishing Methods)

Department 48 - Course 9065.01

I. WOOD STRUCTURES (24 hours)

A. Identify Wood Defects
(Level - 2) (EIT-3 hrs) (T-2 hrs) (L/S-1 hr)
1. Identifying defects in wood samples
a. Mineral streaks
b. Compression failures
c. Brashness and dry rot
d. Knots and pitch pockets
e. Grain - spiral, diagonal, wavy, slope, number, divergence
2. Defining terms used
a. Explain - FAA regulations for aircraft quality
b. Explain - Causes of compression failures
c. Explain - Causes of deterioration and results

B. Inspecting Wood Structures
(Level - 2) (EIT-6 hrs) (T-3 hrs) (L/S-3 hrs)
1. Identify aircraft quality wood
a. Laminated, solid, plywood
b. Moisture content, grain
c. Curing wood - artifically and naturally
d. Warping and shrinking
2. Wood species
a. Hard and soft
b. Spruce and substitutes
c. Replacement of parts
3. Effects of moisture
a. Strength characteristics
b. Moisture and shrinkage
c. Dimensional changes
d. Effects of shrinkage
e. Minimizing shrinkage
(1) Cracks
(2) Fittings

I. WOOD STRUCTURES (Contd.)

C. Servicing and Repairing Wood Structures
(Level - 1) (EIT-15 hrs) (T-12 hrs) (L/S-3 hrs)

1. Judging suitability of wood
   a. Reference used for substituting
   b. Publications authorizing substitution
   c. Considerations for substituting
      (1) Weight
      (2) Strength
      (3) Availability
      (4) Type
   d. Authorization for substituting
2. Describing glues and techniques
   a. Surface preparation
   b. Effects of temperature
   c. Types of glue
   d. Assembly, clamping and drying time
   e. Features of a good glue joint
   f. Mixing procedure for glue
   g. Pressure and assembly of parts
   h. Working life of glue
   i. Mixing glue - proportions and temperature time
   j. Effects of glue on finishes
3. Reading drawings of wood parts
   a. Repairs of cracks and breaks
   b. Reinforcement plates, feathering
   c. Ribs - types, attaching to spars
   d. Repair of ribs - types, locations, precautions
   e. Trammeling
   f. Plywood patches, bend radius, types of patches, grain direction
   g. Spar repairs - splicing specifications, scarfs, plates
   h. Spar reinforcement plates, substitution sizes and materials
4. Repairing elongated bolt holes
   a. Causes of elongation
   b. Use of bushings to minimize effects
   c. Plywood reinforcement plates
   d. Records necessary upon repairing
   e. Repair procedure
      (1) Cutting and removing
      (2) Splicing in new sections
      (3) Drilling new holes

I. WOOD STRUCTURES (Contd.)

5. Identification of protective finishes
   a. Application to end grain
   b. Dope-proof paint uses and substitutes
   c. Sealing interior surfaces
   d. Finishes affected by glue
   e. Foreign substances and effects
      (1) Oil and grease
      (2) Waxes and cleaners

II. FABRIC COVERING (36 hours)

A. Selecting and Applying Fabric and Plastic Covering Materials
(Level - 1) (EIT-12 hrs) (T-6 hrs) (L/S-6 hrs)
1. Identify fabrics and seams and describe methods of applying fabric
   a. Kinds of textile material
      (1) Factors determining selection
      (2) Relative durability of covers
      (3) Strength criteria
      (4) Workability and repairs
   b. Sewed seams
      (1) Types
      (2) Relative features
   c. Doped seams
      (1) Limitations of use
      (2) FAA requirements
2. Covering practices
   a. Inter-rib bracing
   b. Rib stitching specifications
   c. Covering methods
      (1) Envelope or slip cover
      (2) Blanket
   d. Accessories
      (1) Tapes
      (2) Inspection rings
      (3) Cords and threads

B. Inspecting, Testing and Repairing Fabric
(Level - 3) (EIT-24 hrs) (T-12 hrs) (L/S-12 hrs)
1. Inspecting fabric
   a. Locating fabric deterioration
   b. Factors affecting deterioration
   c. Factors affecting airworthiness

II. FABRIC COVERING (Contd.)

2. Fabric testing
   a. Reason for testing
   b. Methods of testing
   c. Areas for testing
   d. Criteria for tests of fabric
      (1) Publications
      (2) Regulations for fabric
      (3) Testing type of dope on fabric
3. Fabric repairs
   a. Making "L" and "V" repairs
   b. Cleaning patch area
   c. Making doped repairs
      (1) Methods
      (2) Limitations
      (3) Regulations
      (4) Control repairs

III. AIRCRAFT FINISHES (75 hours)

A. Selecting Trim and Touch-up Paint
(Level-1) (EIT-9 hrs) (L/S-6 hrs)
1. Registration number specifications
   a. Size
   b. Color
   c. Type
2. Trim and Trade Mark designs and ornamentation
   a. Decals - Use and application
   b. Masking, stenciling and ready made stencils

B. Identifying and Selecting Aircraft Finishing Materials
(Level - 2) (EIT-9 hrs) (T-3 hrs) (L/S-6 hrs)
1. Kinds of dope and uses
   a. Rejuvenation and purposes
   b. Primers, acid proofing and dope proofing
2. Lacquers and enamels
   a. Thinner
   b. Reducer
   c. Solvents

III. AIRCRAFT FINISHES (Contd.)

C. Dope and Paint Application
(Level - 2) (EIT-45 hrs) (T-15 hrs) (L/S-30 hrs)

1. Hand application of dope and paint
   a. Precautions
   b. Brushing and spraying
   c. Advantages of dopes
   d. Grommets, inspection rings and tapes
   e. Patches and specifications
   f. Location and uses
   g. Preparation of surfaces
   h. Wet and dry sanding
   i. Primers and paints
2. Spray application of dope and paint
   a. Types of spray gun
   b. Operation and adjustment
   c. Troubles encountered
      (1) Runs and sags
      (2) Blush
      (3) Pin holes, blisters and orange peel
   d. Correction of troubles

D. Inspecting Finishes and Identifying Defects
(Level - 2) (EIT-12 hrs) (T-6 hrs) (L/S-6 hrs)

1. Compatibility of finishes
   a. Testing
   b. References for mixing
2. Identifying causes of defects
   a. Contributing factors
   b. Corrections necessary
   c. How to avoid defects

IV. QUINMESTER POST TEST

BEHAVIORAL OBJECTIVES

BLOCK I - WOOD STRUCTURES

A. Identifying Wood Defects

1. Identify wood defects in samples

Given:

AC 43.13-1 or equivalent publication, random samples of aircraft wood, some of which contain the defects described in AC 43.13-1.

Performance:

The student will interpret the information contained in AC 43.13-1 and select those samples of wood that would be acceptable for repair of wood aircraft structures.

Standard:

The defects will be identified and the reference specifications interpreted without error.

2. Defining Terms Used

Given:

AC 43.13-1 or equivalent publication or regulations of aircraft woodwork regarding quality, permissible failures and results of deterioration.

Performance:

The student will interpret the information in the publication and be able to explain the causes of aircraft wood deterioration and failures, and the requirements of aircraft quality wood.

Standard:

The student will be able to interpret and explain aircraft wood deterioration and failures with 70 percent accuracy.

B. Inspecting Wood Structures

1. Identify aircraft quality wood

Given:

Random samples of aircraft parts made of plywood, laminated and solid wood and a list of the various kinds of aircraft quality wood.

Performance:

The student will identify each type of wood used in the structure, and describe the strength characteristics which influence the selection of such materials for repair of aircraft wood structures. The student will arrange the list of woods in descending order of strength.

Standard:

The student will identify five species and three forms of aircraft wood and interpret information from AC 43.13-1 without error.

2. Wood species

Given:

AC 43.13-1 or equivalent publication describing the various wood species regarding hard and soft qualities.

Performance:

The student will interpret the information and be able to name the various hard and soft species and their applications to aircraft wood work.

Standard:

The student will be able to interpret the wood species and types information with an accuracy of 70 percent.

3. Effects of Moisture

Given:

AC 43.13-1 or other appropriate reference information.

Performance:

The student will interpret information pertaining to the effect of moisture on the size and strength of wood structural members. The student will make a sketch illustrating the change in dimensions (shrinkage effects) due to variations in moisture content.

Standard:

The student will use correct nomenclature to describe the strength and dimensional changes in tangential, radial and longitudinal directions.

C. Servicing and Repairing Wood Structures

1. Judging suitability of wood

Given:

A list containing the names of five kinds of wood and AC 43.13-1 or other appropriate reference information.

Performance:

Using reference information, the student will select at least two substitute species that exceed the strength properties of aircraft spruce.

Standard:

The student will select two substitute species without error.

2. Describing Glues and Techniques

Given:

Advisory Circular 43.13-1 or other suitable reference information.

Performance:

The student will describe the preparation of wood surfaces for gluing, the types and characteristics of acceptable glues, spreading of glues, assembly time in gluing, gluing pressures and methods of applying pressures.

Standard:

The student will locate information in the reference publications and use correct nomenclature as part of the description and explanation of procedures.

3. Reading Drawings of Wood Repairs

Given:

AC 43.13-1 or equivalent reference information and an information sheet containing six undimensioned drawings of typical scarf joints.

Performance:

The student will locate information applicable to the scarf splice joints described in AC 43.13-1. He will read the diagrams and drawings and apply the dimensions to sketches of typical wood structural repairs.

Standard:

Correctly determine ratio dimensions for five undimensioned drawings or sketches of typical structural repairs.

4. Repairing Elongated Bolt Holes

Given:

AC 43.13-1 or equivalent reference information.

Performance:

The student will describe the procedures and methods of repairing elongated bolt holes in wood spars.

Standard:

At least two methods of repair will conform to AC 43.13-1.

5. Identification of Protective Finishes

Given:

AC 43.13-1 or equivalent reference information and five samples of acceptable and unacceptable finished wood aircraft structures.

Performance:

The student will use the reference information as an aid in describing the materials and procedures approved to seal wood aircraft structures, and recognize acceptable finishes.

Standard:

The student will recognize those sample finishes that are acceptable.

BLOCK II - FABRIC COVERING

A. Selecting and Applying Fabric and Plastic Covering Materials

1. Identify fabrics and seams and describe methods of applying fabric

Given:

AC 43.13-1 or equivalent reference publications; samples of cotton, linen and synthetic textile materials and samples of doped and sewed seams.

Performance:

Using the references, the student will identify aircraft textiles (both before and after doping) and identify the correct fabric to be used in covering an aircraft when the airspeed and wing loading are specified. He will compare the samples of doped and sewed seams with the specifications appearing in the publications. He will describe the acceptable methods of applying fabric.

Standard:

The student will locate reference information. He will identify the kind of fabric without error. He will correctly judge whether the sample seams conform to the specifications and correctly describe methods of applying fabric.

2. Covering Practices and Methods

Given:

AC 43.13-1 or equivalent publication describing approved methods of covering aircraft components and the miscellaneous items in conjunction with the covering process.

Performance:

The student will be able to interpret the information and apply it to the component regarding the various methods of covering, and the processes accompanying the covering of the component.

Standard:

The student will be able to interpret and apply the information on covering that would result in an airworthy accomplishment.

B. Inspecting, Testing and Repairing Fabric

1. Inspecting fabric

Given:

AC 43.13-1 or equivalent reference sheets or information sheets on inspection of aircraft fabric and finishes, rags and solvent and sample deteriorated finish patches so that the student may compare a good finish with a deteriorated one.

Performance:

The student will be able to inspect fabric and finishes on the aircraft and determine the state or condition of the surface in comparison with samples of deteriorated finishes, and be able to report to the instructor the condition as to its airworthiness.

Standard:

The student will be able to report on the condition of a fabric surface as to its airworthiness with return-to-service accuracy.

2. Fabric Testing

Given:

Maule and/or Seyboth fabric tester, a fabric covered structure and AC 43.13-1 or equivalent reference sheet and the necessary tools with which to make a fabric test.

Performance:

The student will be able to make necessary and various types of strength tests on the fabric and be able to determine the condition of the fabric as to its airworthiness.

Standard:

The student will be able to perform the tests with accuracy sufficient to determine satisfactorily to the instructor, the airworthy condition of the aircraft surface.

3. Fabric Repairs

Given:

AC 43.13-1 or equivalent publication describing the FAA approved methods of repairing fabric damages in an airworthy manner.

Performance:

The student will be able to interpret the information and apply it to the component, accomplishing the various types of repair to fabric damages on an airplane or component.

Standard:

The student will be able to interpret and apply the information on repairs that would result in an FAA approval of the repair.

BLOCK III - AIRCRAFT FINISHES

A. Selecting Trim and Touch-up Paint

1. Registration Number Specifications

Given:

Appropriate Federal Air Regulations and graph paper.

Performance:

Using Federal Air Regulations, Part 45, as a reference, the student will locate the information which establishes the location, size and display of aircraft registration markings on Civil Aircraft of United States Registry.

On grid or graph paper, the student will draw the letters and numbers used as registration marks and describe the application of trim and methods of touching-up paint.

Standard:

The student will maintain the correct height, width, stroke and spacing. Description will comply with information provided.

2. Trim and Trade Mark Designs and Ornamentation

Given:

Appropriate FAR, various airline trade marks, designs and ornamentation booklets or publications.

Performance:

Using the proper booklets and designs, the student will be able to outline and lay out simple designs for application as aircraft trim or ornamentation.

Standard:

The student will be able to do the layout and design in a manner that should be neat in appearance to the eye and acceptable to the industry. The work must be acceptable to the instructor.

B. Identifying and Selecting Aircraft Finishing Materials.

1. Kinds of Dope and Uses

Given:

Labled samples of nitrate and butyrate dope and appropriate thinners

Performance:

The student will examine the labeling and physical characteristics of each sample and select the thinner which would be used with each of the sample materials. He will be able to distinguish between lacquer and enamel by physical examination of the material.

Standard:

Correctly select an acceptable thinner for each of five finishing materials. Correctly distinguish between lacquer and enamel.

2. Lacquers and Enamels

Given:

Labled samples of aircraft finishing materials, appropriate FAR publications, AC 43.13-1, and data sheets on primers, acid proof and dope proof paints.

Performance:

The student will be able to identify and select various kinds of primers, rejuvenators, dope proofing, accessories, reducers and solvents for use in aircraft finishing.

Standard:

The student will be able to identify and select the finishing materials without error.

C. Dope and Paint Application

1. Hand Application of Dope and Paint

Given:

A fabric covered structure, covering and finishing materials and a procedure sheet or written instructions.

Performance:

The student will apply dope by brush application. He will apply surface tapes, drain grommets and reinforcing patches as part of the doping procedure.

Standard:

The resultant doped fabric surface will comply with the requirements of AC 43.13-1.

2. Spray Application

Given:

Sample spray gun equipment and various types of spray gun, appropriate publications and diagrams of spray gun equipment.

Performance:

The student will be able to identify various spray equipment accessories, their use in the finishing process and be able to explain the manipulation and employment of the spray equipment in the finishing process.

Standard:

The student will be able to perform these operations without error to the satisfaction of the instructor.

D. Inspecting Finishes and Identifying Defects

1. Compatibility of Finishes

Given:

AC 43.13-1 or equivalent information, random sample aircraft parts in which the finishes contain defects that are usually associated with spray painting.

Performance:

The student will recognize the kind of material that was originally applied as a finish. He will describe which finishing materials may be applied over the original finish. He will recognize defects in the finishes of the sample parts.

Standard:

Recognition of at least 70 percent of the original finishes and all of the defects; correct identification of the finishing materials that may be used over the original finish.

2. Identifying Defects and Causes

Given:

AC 43.13-1, written information sheets and various paint publications informative on painting failures and defects, together with sample defective painting operations.

Performance:

The student will be able to identify the various types of painting failures and defects and be able to explain the remedies for these defects along with the preventive measures needed to avoid these failures and defects.

Standard:

The student will be able to perform these operations without error in accordance with a good and proper finishing job.

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Films:

1. Airplane Structures. 16mm. 45 min. Black and White. Sound. Jam Handy.

2. Building a Wooden Rib. 16mm. 45 min. Black and White. Sound. Jam Handy.

3. Patching Fabric. 16mm. 20 min. Black and White. Sound. Jam Handy.

4. Repairing a Wooden Rib. 16mm. 20 min. Black and White. Sound. Jam Handy.

5. Rib Stitching. 16mm. 20 min. Black and White. Sound. Jam Handy.

6. Splicing a Wooden Spar. 16mm. 20 min. Black and White. Sound. Jam Handy.

7. Using a Portable Spray Gun. 16mm. 30 min. Black and White. Sound. Jam Handy.

A P P E N D I X

Quinmester Post Test Sample

Quinmester Post Test

Name_____ Date_____ Score_____

1. What is the best method of testing the service serviceability of fabric?
    1. Punch tester.
    2. Thumb pressure.
    3. Lab test for tensile strength.
    4. Scraping the fabric with a sharp blade.

2. Which of the following fabrics will deteriorate first?
    1. Dark colored fabric on the top of a control surface.
    2. Dark colored fabric on the bottom of a control surface.
    3. Light colored fabric on top of a control surface.
    4. Light colored fabric on the bottom of a control surface.

3. What causes runs and sags when applying dope:
    1. Too much dope.
    2. Not enough dope.
    3. Applying dope too dry.
    4. Humidity too low.

4. When finishing a structural wood surface, clear varnish should be used instead of paint because
    1. the transparent coat permits visual inspection of the surface.
    2. varnish becomes hard when applied to wood.
    3. varnish has a resin base and is therefore harder than paint.
    4. varnish will absorb more atmospheric moisture and therefore prevent dry rot.

5. A characteristic of laminated wood is that
    1. it is similar to plywood.
    2. the grain is wavy.
    3. the grain is parallel.
    4. the grain is perpendicular.

6. When a mechanic sews several lengths of fabric together for the envelope method of wing covering, he should remember that seams
    1. should always run at a 45° angle to the chord line.
    2. should run parallel to the chord line.
    3. should run spanwise.
    4. that run parallel to the chord line are preferable, however, spanwise seams are acceptable.

7. What types of decay are permissible in wood used in aircraft?
    1. No decay is allowed, but some blemishes are permitted.
    2. Decay which occurred before curing.
    3. Decay which occurred after curing.
    4. Decay which is causing the grain to start separating.

8. How can you tell the difference between butyrate and nitrate dope?
    1. Cut out a piece of doped fabric and have it tested.
    2. Punch with thumb and see how long it will take it to come back to shape.
    3. Rub a small surface with lacquer thinner.
    4. Scrape off a small piece and drop in carbon tetrachloride. Butyrate dope will dissolve and nitrate will not.

9. The main purpose of using dope in the finishing of aircraft fabrics is
    1. protection from the elements of the weather.
    2. the rough underfinish it creates previous to painting the fabric surfaces.
    3. the non-taut fabric surface it creates.
    4. tautening and protection of the fabric.

10. A rejuvenator is used to
    1. make fabric stronger.
    2. soften old dope and seal cracks.
    3. make the fabric sag slightly and be more resistant to tears.
    4. prevent orange peel and pebble effect when applying dope.

11. It is common practice to brush instead of spraying the first coat of dope. This is to
    1. allow dope to penetrate the fabric and lay the nap down.
    2. reduce the possibility of blushing.
    3. cut down on doping time.
    4. reduce the possibility of pinholes.

12. The total number of coats of dope should not be less than that necessary to result in a taut and well filled finish. The minimum number is usually considered to be
    1. 4 clear coats and 3 pigmented coats.
    2. 3 clear coats and 5 pigmented coats.
    3. 2 clear coats, 2 aluminum pigmented coats, and 2 pigmented coats.
    4. 3 clear coats, 2 aluminum pigmented coats, and 3 pigmented coats.

13. Aircraft fabric is classified by
    1. weight and thread count.
    2. thread count and tensile strength.
    3. tensile strength and weight.
    4. weight, tensile strength and thread count.

14. When using rejuvenator on fabric surfaces, what is the proper application technique?
    1. Spray rejuvenator on, then spray on new clear dope.
    2. Sand surface lightly so the rejuvenator will have a more penetrating effect.
    3. Remove old dope down to clear dope and apply rejuvenator.
    4. Spray on several coats of rejuvenator over the old dope.

15. Numbers and letters used as identification marks on aircraft must conform to certain standards. One of the requirements is that
    1. it be painted black when used on light colored aircraft.
    2. the width of the letters and numbers must be 2/3 their height.
    3. the width must be 3/4 their height.
    4. the minimum height must be 20 inches.

16. When using the blanket method of covering a fabric covered wing, it is important that
    1. only ribstitch cord be used to sew the panels together.
    2. a seam running chordwise can be directly over a rib, if lacing does not penetrate seam.
    3. a seam running spanwise must not be directly over a rib.
    4. the fabric be of sufficient width to keep the seam numbers below 7 on any given wing panel.

17. Reinforcing plates used for splicing solid or laminated rectangular spars
    1. should be installed using glue and nails.
    2. should be one-half as thick as the spar.
    3. may be spruce or plywood.
    4. must be plywood with a recommended length 12 times the thickness of the spar.

18. A mechanic prepares to patch a small tear in the fabric surface of an aircraft. He decides to repair it by the use of a doped-on-patch. He should clean the area to be patched, then
    1. remove all the pigmented dope from the surface around the tear.
    2. apply a double thickness of Grade A fabric using the proper type of dope.
    3. apply the patch being careful to use only aluminum pigmented dope.
    4. apply the patch using the baseball stitch.

19. A finish remover with a base of acetone can be used to remove
    1. lacquer.
    2. varnish.
    3. may not be used.
    4. all aircraft finishes.

20. A wing is refinished by applying dope. If the dope scales after drying, the scaling usually is caused by
    1. the improper removal of oil, grease, wax, or soap from the old surface.
    2. an improper application of the original coat of dope.
    3. too much thinner in the dope.
    4. your undercoat not having been sanded.

21. The minimum pressing time, when gluing woods, is
    1. two hours.
    2. four hours.
    3. seven hours.
    4. eleven hours.

22. The normal desired moisture content of wood is 8-12%. What moisture content will produce the maximum glue joint strength?
    1. Low minimum in hardwood.
    2. Maximum allowable in hardwood.
    3. Low minimum in softwood.
    4. Maximum allowable in softwood.

23. Proper gluing procedures require you to apply the glue
    1. within 8 hours after the surface is prepared.
    2. within 24 hours after the surface is prepared.
    3. whenever the temperature is below 55 degrees.
    4. at any time interval after the surface is prepared as long as the surface is clean.

24. The wood most widely used for main aircraft structural work, such as spars, is
    1. balsa.
    2. birch.
    3. spruce.
    4. white oak.

25. What is the procedure to prevent battery acid from corroding the fuselage near the vent?
    1. Use three extra coats of dope near the vent.
    2. Paint the area with acid-proof paint.
    3. Dope a piece of acid-proof fabric over the area.
    4. None of these is correct.

KEY TO QUINMESTER POST TEST
9065.01

1. 3	10. 2	18. 1
2. 1	11. 1	19. 4
3. 1	12. 4	20. 1
4. 1	13. 4	21. 3
5. 3	14. 2	22. 4
6. 4	15. 2	23. 1
7. 1	16. 2	24. 3
8. 3	17. 3	25. 2
9. 4		